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Which are the "best" schools in Ireland? Analysing feeder school performance using student destination data⁺

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Abstract

This paper represents an investigation of the broad factors which underpin the success of feeder schools in terms of the proportion of their “sits” who proceed to third-level education and, also, in terms of the “quality” of their educational destinations. It distinguishes between three school types: public (non-fee paying, English language) private (fee paying, English language), and *Gaelscoil* (non-fee paying, Irish language). Both private schools and the *Gaelscoileanna* reported much better results than public schools. From this, the paper disentangles the nature of this advantage by investigating the extent to which private school and *Gaelscoil* advantage over public schools was predicated on better circumstances and/or on better responses to circumstances. Our results show that private schools and the *Gaelscoileanna* had a response advantage over public schools: if private schools and the *Gaelscoileanna* were constrained to responding to their circumstances in the manner in which public schools responded to theirs, the performance of private schools and the *Gaelscoileanna* would suffer. By constraining the coefficient responses of all three types of schools to be that of public schools, we arrive at a revised list of the "best performing" twenty five feeder schools in Ireland. This is different from, but not dissimilar to, a ranking of the best performing twenty five schools based on their raw performance.

⁺ We are grateful to Gráinne Faller of the *Irish Times* for providing us with data on Feeder Schools in Ireland for 2008 and to two referees and an Editor for comments that have substantially improved the paper. Needless to say, we alone are responsible for any of its deficiencies.

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1. Introduction

It is a pleasant duty to strive on behalf of one's children and, for many parents, an important form that this takes is locating a good school for their offspring. But, what is a "good" school? At a mundane level the answer might seem obvious: for example, the *Irish Times* league table of "feeder" schools in Ireland (that is, schools from which students sit the Irish School Leaving Certificate examination) provides, for every such school, information on the numbers of its school leavers who proceed to third level education and, for those that do, their institutional destination; ambitious parents might, legitimately, view with favour those schools from which a large proportion of leavers proceed towards higher education.¹

Given the existence of school league table - their the pros and cons being discussed in the following section - this paper argues that schools in Ireland differ in terms of their circumstances and their environment: *inter alia* some schools charge fees, some teach in the Irish language, some are based in prosperous areas, others in areas of deprivation. Furthermore, different schools are affected differently by – respond differently to – the same set of circumstances: two schools might both be located in an area of high unemployment but one might be much more successful than the other. It is appropriate, therefore, to ask how such differences – in circumstances and response to circumstances - should be taken into account in judging the relative performance of schools as measured by league tables. This paper proposes a methodology for doing so and, by applying it to the *Irish Times* data (*op. cit.*), arrives at a re-ranking of feeder schools in Ireland which is different from, but not dissimilar to, that suggested by the raw data.

¹ These data were published in the *Irish Times* of the 4th December 2008.

In so doing, the paper undertakes an investigation of the broad factors which underpin the success of feeder schools in terms of the proportion of their “sits” who proceed to third-level education and, also, in terms of the “quality” of their educational destinations. For this study, these factors took three forms: *school type* (public, private, *Gaelscoil*); *school location* (city, north Dublin, south Dublin, “elite” Dublin); and *county level socio-economic characteristics*.

2. School League Tables: A Review

League tables - defined as the “weighted combinations of performance indicator scores where the total is used to rank institutions” (Brown 2006 p.33) - are often used to show comparative results in sport and commerce (Adab *et. al.*, 2002) and to rank the performance of schools, universities, hospitals and other institutions. School league tables have received considerable attention and for many remain a sensitive and, indeed, contested issue. The existence of these tables is prominent in Britain; however, both Northern Ireland and Wales have abolished them while Scotland has never had league tables (Hallgarten 2001). As Hallgarten (2001) also pointed out, it is important to note that no government has ever actually published school league tables: they merely publish the results of each school's examination results (alphabetically) and leave it to the media to deduce a ranking from these results.

The ostensible purpose of league tables is to provide ‘stakeholders’, specifically parents, with information about the performance of schools in public examinations, such as for example the Leaving Certificate in Ireland and the GCSE and 'A' levels in the UK (West and Pennell 2000). These results allow parents to discriminate between schools based on their students' performance in public exams. This heavy emphasis on examination results as an indicator of school performance

raises the fundamental question of whether the success of schools should be judged solely in terms of feeding third level education.

A Principal of an Irish secondary school recently conveyed his concerns about league tables, highlighting the fact that the tables were silent about those students who choose alternative routes to third level education.² Such alternative paths might include: apprenticeships, employment, agricultural, art, and dance colleges, and travel.³ It was also pointed out that the pressure for schools to perform in these league tables might in fact hinder other school activities such as sport, music, and drama and, thereby, dilutes performance defined more widely. According to a member of the Association of Secondary Teachers in Ireland (ASTI) “it is damaging to suggest that schools which have the best academic results are automatically the best schools”.⁴

West and Pennell (2000) in reference to the work of Thomas (1998) remarked that the publication of league tables can be an inadequate and inaccurate measure of performance because they do not contain any knowledge of the background or characteristics of the school. They also fail to take account of the progress that students may make in school, and they therefore can provide a misleading view of a school when based solely on results (West and Pennell 2000).

League tables used as an indicator of school performance exerts pressure on both the schools and teachers. Teachers are under pressure to ensure their students get high grades, while schools feel the need to attract students who are academically talented and, indeed, to shun less academic students even though they might have other, non-academic, abilities (West and Pennell 2000). Schools can be pro-active in selecting their students from particular social groups and buttress their choice by

² Irish Examiner, 27th December 2008.

³ See, for example, Stakelum (2008) on the teaching of music and O'Shea (2007) on the role of education in effecting life change.

⁴ Independent, 5th November 2006.

imposing other conditions such as: compulsory fees; indirect fees that are made on a voluntary basis; uniforms; and extracurricular activities (Lynch and Moran, 2006). Each of these factors is controlled by a school, enabling it to attract students of high ability (and often from the "right" social background) and, thereby securing it a high position in school league tables.

Under the Irish Constitution (Article 42), “parents are defined as [the] primary and natural educator of the child ... and are free to send their child to any school they wish” (Buchanan and Fox, 2008 p. 269). The publication of these league tables therefore provides an incentive for parents to research and select the "best" schools for their children. Lynch and Moran (2006), however, highlighted that only better-off and better-educated parents would have the necessary confidence, knowledge and resources to place their offspring in the best schools. For less well endowed parents, limitations of resources - both economic and informational - would severely restrict the ability to exercise choice. Hannan *et al* (1996) pointed out that nearly half of second-level students did not go to their nearest school: unsurprisingly, most of them came from relatively affluent backgrounds.

A family’s socio-economic status can therefore influence the academic achievement of children (Caldas and Bankston III, 1997) with wealthier families being able to “buy” educational success by sending their children to private schools, engaging private tutors, or living in areas containing good schools (Marks *et al* 2006 p. 106). Poor families on the other hand may find it difficult to afford even basic educational resources for their children (Marks *et. al.*, 2006; Yang and Gustafsson, 2004).

While Caldas and Bankston III (1997) highlighted the link between socio-economic status and a child’s academic achievement, they also noted the direct

relationship between a child's academic achievement and the socio-economic status of their peers⁵. Sykes and Kuyper (2009) through a multilevel analysis of 17,836 Dutch secondary school students, living in 3,085 neighbourhoods, found a significant relationship between the students' neighbourhood attributes and their educational achievement. In Scotland, Garner and Raudenbush (1991) found, after testing 2,500 youths, that after controlling for individual and family background characteristics, neighbourhood deprivation had a significantly negative effect on children's performance in school. These studies imply that students are influenced by their neighbourhood environment and, therefore, it is not only their socio-economic status but also that of their peers which affects their educational achievement. Since students' examination results are strongly affected by a variety of factors external to the school, some of which were discussed above, a school's league position might be a poor reflection of the quality of its management and teachers.⁶

While proponents of school league tables accept many of these concerns, they put forward the following four points in their defence (Brown, 2006, p.34): (i) the information provided by league tables helps students, particularly those from less advantaged backgrounds, to make better choices about where to study; (ii) institutions should have sufficient confidence in their missions not to worry about their league table position; (iii) institutions that are not happy with their rank should suggest alternative measures that better reflect their mission; (iv) institutions should put more effort into providing information to students and parents about the quality of their product. With this background, we turn, in the remainder of this paper to addressing the research issues, alluded to in the introductory section, relating to feeder schools in Ireland.

⁵ Webber and Butler (2007) found similar results.

⁶ In addition to these concerns, there are also problems of data availability and reliability in constructing league tables.

3. The Data and Preliminary Results

The *Irish Times* feeder school tables provided, *for each of 710 schools*, information on:

1. Its name and address.
2. Its area of location - this was provided by post code for Dublin schools but schools outside Dublin were identified solely by their province (Munster, Leinster, Ulster, and Connaught).
3. Whether the school was fee paying, non-fee paying, or a "grind" school.⁷
4. The total number of its students who sat the Leaving Examination (hereafter, this number is referred to as "sits") and the number going on to 31 separately identified places of third level education (shown in Table 1).⁸
5. Whether the school was a "large" or a "small" school. The Irish Times data identified the schools as "large" or "small" without providing numbers of students in the two types of schools. There was some correlation between the size of the school and the number of sits (large schools had a larger number of sits) but this correlation was not perfect.

In addition we also identified from the Department of Education's website the Irish language feeder schools (hereafter, *Gaelscoileanna*).⁹ We should emphasise that

⁷ "Grind" schools, known in Britain as "crammers", take as their sole purpose the preparation of students for the Leaving Certificate examination. They are privately owned and charge fees.

⁸ There were 41 schools in the Irish Times data set for which the number of its students proceeding to third level education in that year exceeded the number of its students who sat the Leaving Certificate exam for that year. This was because some of its students who had sat the exam in the previous year had - perhaps, after a gap year - decided to enter third level education in the current year. To adjust for this, we treated such students as "current sits" of the relevant schools. The other factor is that colleges do not just take into account the last school attended by a student but they give credit to every school attended by a student. This could mean that if a student attended a different school each year, that one student would be attributed to five different schools. Where this really comes into play however, is in repeat students and this is the source of most of the distortion because any student who repeats in a different school is attributed to both schools attended

⁹ http://www.gaelscoileanna.ie/index.php?page=secondary_schools

we did not have the information to hand to explore other classifications by school type such as voluntary secondary, vocational, or community/comprehensive.

In order to quantify the socio-economic context within which the schools operated, we supplemented these data with information from the Irish Census of 2006. The Census provided, by county, an array of information about socio-economic conditions.¹⁰ By using school addresses to identify the counties in which they were located, we were able to associate with each school a number of county-specific variables:

- a) *Urbanisation*: the percentage of persons, aged 20 years or more, in the county, who lived in urban area.¹¹
- b) *Owner-occupation*: the percentage of persons, aged 20 years or more, in the county who were owner-occupiers.
- c) *Irish*: the percentage of persons, aged 20 years or more, in the county who declared their ethnicity as "Irish".
- d) *Completed education*: the percentage of persons, aged 20 years or more, in the county whose completed education *did not exceed* lower secondary.
- e) *Personal computer*: the percentage of persons, aged 20 years or more, in the county who had a personal computer.
- f) *Unemployment*: the percentage of persons, aged 20 years or more, in the county who were unemployed.¹²

¹⁰ Carlow; Dublin City; South Dublin; Fingal; Dún Laoghaire-Rathdown; Kildare; Kilkenny; Laoighis; Longford; Louth; Meath; Offaly; Westmeath; Wexford; Wicklow; Clare; Cork City; Cork County; Kerry; Limerick City; Limerick County; Tipperary North; Tipperary South; Waterford City; Waterford County; Galway City; Galway County; Leitrim; Mayo; Roscommon; Sligo; Cavan; Donegal; Monaghan.

¹¹ Towns and cities with a population of 1,500 or more.

g) *Occupational class*: the percentage of persons, aged 20 years or more, in the county who were in professional, managerial, or technical occupations.

We used two measures of school performance:

- A. PR: the proportion of its "sits", expressed as percentage, proceeding to third level education, regardless of institutional destination.
- B. WPRI: The *weighted proportion index* of a school. In calculating this we assigned three points if a student went to Trinity College Dublin or University College Dublin;¹³ two points if he/she went to another university;¹⁴ one point if he/she went to a non-university institution. The *weighted* proportion (WPR) of a school was the *weighted* average of these points, the weights being the proportion of its students going to each of these three, different, destinations where, for every school: $0 \leq WPR \leq 3$. The WPRI was then defined as $(WPR/3) \times 100$ and, consequently, is to be interpreted as the percentage of the maximum WPR achieved by the school.

Table 2 shows the performance of schools by county. In terms of PR, the best performing counties were: Dún Laoghaire-Rathdown (83.6), Leitrim (81.7), Mayo (81.1), Sligo (81.1), Monaghan (80.7), and Galway City (80.5). In terms of WPRI, the best performing counties were: Galway City (48.0), Dublin South (45.4), Dublin City (45.3), Sligo (41.5), Kilkenny (41.5), Roscommon (41.4), Leitrim (41.2), Cork City (41.1). So, while there is some overlap between the PR and the WPRI measures in evaluating school performance by county, this overlap is far from perfect: as a broad generalisation, cities were better at sending their school leavers to "quality"

¹² Expressed as a percentage of the labour force.

¹³ Remembering that *Times Higher Educational Supplement*, in its 2009 ranking of universities, included both TCD and UCD among the top 100 universities in the world.

¹⁴ Including UK universities. The specific UK university was not mentioned.

destinations than in sending a large proportion to third level education, irrespective of destination.

Table 3 shows performance by school type. The proportion of the 50,506 sits, in the 710 feeder schools in Ireland considered in their entirety, proceeding to third level education was 72.4 and the WPRI was 40.6. Compared to these all-Ireland figures, the 2,354 sits in the 46 *Gaelscoileanna*, with a PR of 80.1 and a WPRI of 45.4, did much better and the 4,273 sits in the 56 fee paying schools (hereafter, "private" schools"), with a PR of 92.4 and WPRI of 65.7, did the best. This left the 41,322 sits in the 596 non-fee paying, non-"grind", English language schools (hereafter, "public" schools) - with a PR of 69.3 and a WPRI of 36.9 - performing below all-Ireland standards.

4. Research Questions and Methodology

This study's first point of interest was to quantify the extent to which a school's "performance"(measured by its PR or WPRI) was affected by its *type* (*Gaelscoileanna*, private, public) and by the *circumstances* that obtained in the county in which it was located (items *a-g*, above). A *multivariate* analysis was required to achieve this in a rigorous manner. Such analysis would allow one to quantify the effects of a change in the value of a variable on school performance *after controlling for other the values of the other variables*. So, for example, *ceteris paribus* by how much would *average* school performance fall if the average unemployment rate rose by a point? Or, *ceteris paribus* by how much would *average* school performance of private (public) schools fall if the proportion of persons in professional and managerial occupations rose by a point?

The most natural way for economists¹⁵ to conduct such multivariate analysis is by regression analysis: this estimates a linear relationship between the dependent variable (school performance) and the explanatory variables (school type plus county characteristics in school's location) in such a way that the *sum of squared differences* between the observed performance and the performance as located on the regression line is *minimised*. The coefficient values associated with this "least squares" line are then the regression (or least squares) coefficients.¹⁶

The second point of interest was to explain the difference in the average performances between the different school types ((*Gaelscoileanna*, private, public). In particular, we were interested in the extent to which this difference was due to: (i) public schools, compared to private schools, being more *exposed* to circumstances which impinged adversely on performance and (ii) public schools, compared to private schools, *responding* differently to a given set of circumstances which then adversely affected performance.¹⁷

In order to apportion responsibility between exposure and response a *multilevel* analysis was needed. In order to allow the different school types to differ in their responses to a particular set of circumstances, the regression equation - which was earlier estimated on data *pooled* over all the schools - was now estimated *separately* for the three different school types - the *Gaelscoileanna*, the private schools, and the public schools. Using these three separate sets of coefficient responses we decomposed the overall difference in average performance levels

¹⁵ Which, alas, are all three authors.

¹⁶ It is important to point out that the dependent variable (performance as measured by PR or WPRI) takes a *continuum* of values and, so, regression is the most appropriate method of analysis. If, instead, performance had been *categorised* in two (or more) mutually exclusive ways ("good" versus "poor" performance or "good", "fair", "poor" performance) then regression analysis would not have been the appropriate method and one would have had to use methods suitable for discrete dependent variables (discriminant analysis; logit; ordered logit; multinomial logit).

¹⁷ An example of differences in exposure is that private schools might be disproportionately located in more affluent areas. An example of differences in response is that even within the same area private schools might disproportionately attract students from high-achieving backgrounds.

between the three school types into the proportion due to *exposure* difference and the proportion due to *response* difference. The details of this decomposition are provided in section 6.

5. Estimation Results from the Regression Analysis

The existence of a *ternary* divide among Irish feeder schools between the *Gaelscoileanna*, the private schools and the public schools is confirmed by the regression estimates shown in Table 4.¹⁸ These estimates were arrived at by relating school performance, as measured by PR and WPRI, to: school type and characteristics (*Gaelscoileanna*, private, size, number of sists); school area (city schools¹⁹, North Dublin²⁰, South Dublin²¹, and "elite" Dublin)²²; and county level socio-economic characteristics (listed in (a)-(g), above). It should be emphasised that a specific coefficient estimate measures the size of the contribution of its associated variable to school performance, *after controlling for the values of the other variables*.

According to Table 4, a variety of factors contributed positively to school performance: *ceteris paribus* being a private school added 23.62 points to PR and 25.07 to WPRI; the *Gaelscoileanna* added 11.35 points to PR and 9.50 points to WPRI; large schools added 3.53 points to PR and 1.48 points to WPRI; and schools in "elite" Dublin added 9.03 points to PR and 12.41 to WPRI. On the other hand, *ceteris paribus* schools in North and South Dublin reduced PR by 5.91 and 6.81 points, respectively - and reduced WPRI by, respectively, 2.72 and 2.55 points - compared to their counterparts elsewhere in Ireland. Thus, the best combination of school characteristics was a large, private school in "elite" Dublin: such schools added, on

¹⁸ The 12 "grinds" with 2,657 students were excluded from this, and subsequent, regressions.

¹⁹ "City" was defined as an area with urbanisation rate greater than 90 percent.

²⁰ Postcodes: D1, D3, D5, D7,D9, D11, D13, D15, D17.

²¹ Postcodes: D8, D10, D12, D12, D14, D16, D18, D20, D22, D24.

²² Postcodes: D2, D4, D6, 6W, and Dún Laoghaire-Rathdown.

average, 36.18 points to PR and 38.96 points to WPRI compared to small, public schools located outside "elite" Dublin.²³

The performance of schools was also affected by socio-economic conditions in the county in which they were located since *ceteris paribus*:

- I. A percentage point increase in the proportion of persons who regarded themselves as Irish would improve school performance by raising PR by 0.75 points and WPRI by 0.17 points.
- II. The larger the proportion of poorly educated persons - and the higher the unemployment rate - in a county, the worse would be school performance: a percentage point increase in the county proportion educated to lower secondary or less would reduce PR by 0.32 points (but would have no significant effect upon WPRI) while a percentage point increase in the county's unemployment rate would reduce PR by 2.16 points and WPRI by 1.65 points.
- III. An increase in the proportion of persons in professional, managerial, or technical occupations would increase PR by 0.01 points and WPRI by 0.005 points.
- IV. An increase in the proportion of computer owners in a county would cause school performance *to deteriorate* - the PR would fall by 0.94 points and the WPRI by 0.21 points²⁴
- V. An increase in the number of sits would enhance school performance: an additional 10 sits would raise PR by 1.2 points and WPRI by a point.

With these points, we turn to a discussion of schools by type of school.

²³ All the *Gaelscoileanna* were non-fee paying schools.

²⁴ Though, as we show below, the effect of computers on school performance depends upon school type.

Estimates by School Type

The values of the variables listed in Table 4 defined the *context* within which the schools operated; the coefficient estimates represented the schools' *responses* to their operational context. Since the results shown in Table 4 do not allow the coefficients associated with the variables to differ according to school type - the *Gaelscoileanna*, the private, and the public schools - these different school types were constrained to *respond identically* to a particular context. It is, of course, more likely that the different types of school - catering, as they do, to different clienteles - would have responded differently to a specific context. For example, a high unemployment rate in a county might affect a school's performance differently depending on whether it was a private or a public school.²⁵

In order to allow the different school types to differ in their responses to a particular set of circumstances, the regression equation specified in Table 4 was estimated *separately* for the three different school types - the *Gaelscoileanna*, the private schools, and the public schools - and these estimates are shown in Table 5 for performance as measured by PR, and in Table 6 for performance as measured by WPRI. Using the public school coefficients as the basis for comparison, an *italicised* font against a variable indicates that the associated coefficient for the *Gaelscoileanna* or the private schools was significantly different from the corresponding public school coefficient; a normal font indicates no significant difference in the coefficient between the public schools and the other school type(s).

Tables 5 and 6 show very clearly that being "large" helped public and private schools - by lifting their PR by 4.49 and 0.69 points respectively, and their WPRI by 1.95 and 1.53 points, respectively - but it hurt the *Gaelscoileanna* by lowering their

²⁵ Although several counties outdo Limerick County in terms of feeder school performance, Glenstal Abbey School in Co. Limerick (a fee paying school) is one of the most highly regarded in Ireland.

PR by 16.25 points and their WPRI by 7.24 points.²⁶ Being "city" schools, hurt both public and private schools - by lowering their PR by 4.10 and 3.97 points respectively, and their WPRI by 3.15 and 4.09 points, respectively - but it helped the *Gaelscoileanna* by raising their PR by 16.59 points and their WPRI by 10.52 points.²⁷

The "Dublin" effect was very marked for all the school types: compared to public schools elsewhere in Ireland, public schools in North or South Dublin fared worse (by 5.83 and 8.55 PR points and 2.31 and 4.27 WPRI points, respectively) but public schools in "elite" Dublin performed better (by 11.30 PR points and 13.13 WPRI points). The fact that North Dublin had three good private schools²⁸ meant that the performance of private schools in North Dublin in terms of PR was superior to that of private schools elsewhere in Ireland (by 12.98 PR points) but, in terms of WPRI points, it was no better or worse. However, the Dublin effect was most marked for the *Gaelscoileanna*: in "elite" Dublin, they had a PR and WPRI which were, respectively, 27.42 points and 25.18 points higher than for corresponding schools elsewhere²⁹; however, in North and South Dublin, they had PR and WPRI scores which were markedly inferior to *Gaelscoileanna* elsewhere in Ireland.

Three aspects of the county-level characteristics are of interest. First, the general level of "education" in a county among adults (20 years of age or more) affected the performance of public schools in respect of PR and WPRI but it affected the performance of the *Gaelscoileanna* only in respect of PR: a percentage point increase in the proportion of "poorly educated" adults in a county³⁰ reduced the PR of

²⁶ 23, of the 46 *Gaelscoileanna*, 44 of the 56 private schools, and 377 of the 596 public schools, were "large".

²⁷ 14 of the 46 *Gaelscoileanna*, 40 of the 56 private schools, and 179 of the 596 public schools were "city" schools.

²⁸ Belvedere College, Castleknock College, and Sutton Park School.

²⁹ The two *Gaelscoileanna* in "elite Dublin" - Colaiste Iosagain and Colaiste Eoin - had a PR of 100 and a WPRI of 84 and 86, respectively.

³⁰ Whose highest level of completed education was lower secondary or lower.

public schools and of the *Gaelscoileanna* by 0.42 and 2.16 points, respectively; however, a percentage point increase in the proportion of “poorly educated” adults in a county improved the PR and the WPRI of private schools by, respectively, 2.53 and 3.63 points.

Second, for both public and private schools, an increase in the county unemployment rate was associated with a deterioration in performance as measured by PR and WPRI – by 2.33 PR points and 1.76 WPRI points for public schools and by 1.92 PR points and by 2.43 WPRI points for private schools. However, for the *Gaelscoileanna*, an increase in the county unemployment rate was associated with improvement in performance as measured by PR (by 4.1 points) and WPRI (by 2.39 points).

Lastly, the spread of computer ownership in counties was associated with a deterioration in public school performance – by 1.11 PR points and 0.37 WPRI points - but by an improvement in performance by the *Gaelscoileanna* (0.95 WPRI points) and private schools (1.52 PR points and by 2.14 WPRI points).

6. Explaining Differences in Performance between School Types

The Blinder-Oaxaca (B-O) method of decomposing differences between groups, in their respective mean values, into “discrimination” and “characteristics” components is, arguably, the most widely used decomposition technique in economics (Blinder, 1973; Oaxaca, 1973). In this section, this method is applied to decomposing the average performance levels of the three types of schools (public, private, and the *Gaelscoileanna*) into a “circumstances” effect and a “response” effect. The basic idea behind this decomposition is as follows.

The difference in PR and WPRI between the *Gaelscoileanna* and public schools was, respectively, 10.8 and 8.5 points (Tables 7 and 8, column 1); similarly,

the difference in PR and WPRI between private and public schools was, respectively, 23.1 and 28.8 points (Tables 9 and 10, column 1); and the difference in PR and WPRI between private and the *Gaelscoileanna* was, respectively, 12.3 and 20.3 points (Tables 11 and 12, column 1). The question which arises from this is: what part of these differences could be ascribed to differences between the school types in their “circumstances”³¹ and what part could be attributed to differences between them in their “responses” to their circumstances?³²

We can disentangle these influences by considering a hypothetical situation in which the “responses” factor is held constant. This is done by answering the (hypothetical) question: what would the average PR and WPRI of public schools *have been* if public school circumstances had been evaluated using *Gaelscoileanna*, or private school, coefficients (responses)? We refer to these as the “Public school {*Gaelscoileanna*}” and “Public school {Private school}” performances. The differences between the average PR and WPRI of public schools and the corresponding “Public school {*Gaelscoileanna*}” and “Public school {Private school}” averages isolates the effect of “circumstances”: holding “responses” constant at *Gaelscoileanna*, or at private school, levels, this difference represents the inter-school difference in performance due to differences between them in their “circumstances”.

Call this difference, which isolate the influence of school circumstances on school performance, the *circumstances-induced performance difference*. The gap between the observed and the circumstances-induced difference in inter-school performance represents the residual difference: it represents that part of the (observed)

³¹ By which is meant differences between the school types in their *values* of the variables as shown Tables 5 and 6.

³² By which is meant differences between the school types in their *coefficient estimates* (associated with the variables) as shown in Tables 5 and 6.

difference in performance between school types that *cannot be explained* by differences between them in their circumstances. By default, this residual is then attributed to differences between them in their “responses” to their circumstances.

The middle panel of Tables 7 and 8 shows that the PR (Table 7) and the WPRI (Table 8) of public schools improved (from 69.3 to 75.9 for PR and from 36.9 to 43.4 for WPRI) when public school circumstances were evaluated at the *Gaelscoileanna* coefficients. Similarly, the middle panel of Tables 9 and 10 shows that the PR (Table 9) and the WPRI (Table 10) of public schools improved (from 69.3 to 106.2 for PR and from 36.9 to 89.1 for WPRI) when public school circumstances were evaluated at private school coefficients.

The hypothetical question could, of course, have been posed differently: what would the average PR and WPRI of the *Gaelscoileanna*, or private schools *have been* if their circumstances had been evaluated using public school coefficients (responses)? Call these the “*Gaelscoileanna* {Public school}” and “Private school {Public school}” performances. The differences between the average PR and WPRI of the *Gaelscoileanna* and the corresponding “*Gaelscoileanna* {Public school}” average – between the PR and WPRI of private schools and the corresponding “Private school {Public school}” average - *also* isolate the effect of “circumstances”: holding “responses” constant at public school levels, this difference represents the inter-school difference in performance due to differences between them in their “circumstances”.

The last panel of Tables 7 and 8 shows that the PR (Table 7) and the WPRI (Table 8) of the *Gaelscoileanna* fell (from 80.1 to 68.8 for PR and from 45.4 to 35.8 for WPRI) when the *Gaelscoileanna* circumstances were evaluated at public school coefficients. Similarly, the last panel of Tables 9 and 10 shows that the PR (Table 9)

and the WPRI (Table 10) of private schools fell (from 92.4 to 68.8 for PR and from 65.7 to 39.8 for WPRI) when private school circumstances were evaluated at public school coefficients.

It is important to point out that the two separate conceptions of circumstances-induced performance difference need not – and, indeed, except by accident, will not – be equal. Consequently, the residual effects, from the two formulations of the hypothetical question, need not (will not) be equal. Indeed, this a well-known problem with the B-O decomposition: the relative sizes of the circumstances-induced and the residual differences will be different depending upon the choice of a common set of coefficients for comparing the effects of the different sets of circumstances that schools of different types face.

7. The "Best" Schools in Ireland

Table 13 lists the best twenty five feeder schools in Ireland by WPRI performance beginning with the Convent of the Sacred Heart in Dublin 14 with a WPRI of 92.2 and closing with St. Conleth's College in Dublin 4 with a WPRI of 69.0. It is important to put these achievements into perspective: if *every* "sit" in a school proceeded to a place in Trinity College or University College, a school would have a WPRI of 100; the highest ranked school, the Convent of the Sacred Heart, went 92.2 percent towards meeting its maximum possible score. The significant feature of Table 13 is the preponderance of private schools: 22 of the 25 schools were private schools, two were *Gaelscoileanna*, and only one was a public school.³³

However, the previous section showed that if private schools and the *Gaelscoileanna* were constrained to responding to their circumstances in the manner in which public schools responded to theirs, the performance of private schools and

³³ Dominican Convent, Donnybrook.

the *Gaelscoileanna* would suffer; conversely, if public schools were allowed to respond to their circumstances according to private schools', or the *Gaelscoileanna*, coefficient responses, their performance would improve. So, the question we pose is: what would be the WPRI performance of private schools and the *Gaelscoileanna* if, *given their circumstances*, they *did not* have a (coefficient) response advantage vis-à-vis public schools?

In order to answer this question, we use the *public school* equation estimates shown in Table 6 to predict the WPRI scores of *all* the feeder schools in Ireland (public, private, and the *Gaelscoileanna*) to arrive at a ranking of schools based on these predicted WPRI scores. The "top" twenty five schools, under this counter-factual scenario, are shown in Table 14: seven of the schools which were included in Table 13 also feature in Table 14 and the "best" school is now a public school, Colaiste Fhlannain (which did not feature in Table 13). Moreover, of the 25 schools in Table 14, now only 11 are private schools and 14 are public schools.

Needless to say, the plausibility of the counter-factual set out in Table 14 depends on the closeness of the relationship between the predicted and the observed WPRI. A feature of the predictions is that they tended to under predict the observed values (as exemplified by the values in Table 14). A regression of predicted on observed WPRI yielded an adjusted R^2 of 0.87 and the coefficient estimate implied that a percentage point increase in observed WPRI would result in a 1.1 point increase in the predicted value.

In addition, compared to public schools, private schools operated in more favourable circumstances. One particular circumstance which differed significantly between the schools was their relative presence in Dublin 4 and 6 and Dún Laoghaire-Rathdown ("elite" Dublin). Nineteen of the 56 private schools, but only 19 of the 596

public schools (and two of the 46 *Gaelscoileanna*), in Ireland were in this area.

Another feature of the geographical location of schools was the concentration of the *Gaelscoileanna* in certain counties: of the 46 *Gaelscoileanna*, eight were in Cork City and Cork County, eight were in Galway City and Galway County, eight were in Dublin, five were in Donegal, and four were in Kerry; several counties did not have any *Gaelscoileanna*.

8. Conclusions

This paper undertook an investigation of the broad factors which underpinned the success of feeder schools in terms of the proportion of their “sits” who proceeded to third-level education (PR) and, also, in terms of the “quality” of their educational destinations (WPRI). These factors took three forms: *school type* (public, private, *Gaelscoil*); *school location* (city, north Dublin, south Dublin, “elite” Dublin); and *county level socio-economic characteristics*. The first set of investigations, when observations for all schools were pooled in a single regression, showed that private schools and the *Gaelscoileanna* had considerable advantage over public schools and this was encapsulated in terms of a positive “intercept” effect. This led us to disentangle the nature of this advantage by investigating the extent to which private school and *Gaelscoil* advantage over public schools was predicated on better circumstances and/or on better responses to circumstances.

Our subsequent results showed that private schools and the *Gaelscoileanna* had a response advantage over public schools: if private schools and the *Gaelscoileanna* were constrained to responding to their circumstances in the manner in which public schools responded to theirs, the performance of private schools and the *Gaelscoileanna* would suffer; conversely, if public schools were allowed to respond to their circumstances according to private schools', or the *Gaelscoileanna*,

coefficient responses, their performance would improve. By constraining the coefficient responses of all three types of schools to be that of public school schools, we arrived at a revised list of the top 25 feeder schools in Ireland. This was different from, but not dissimilar to, a ranking of the top 25 schools based on their raw WPRI performance.

Needless to say, there will be arguments over how the adjustments were made. In the context of this study, the county level data used could, perhaps, for future work be narrowed geographically to better reflect conditions in school catchment areas. Indeed, there is the wider question of what constitutes a 'catchment' area? Or, to put it differently, does the concept of a catchment area exist at all for affluent parents who are constrained neither by transport costs nor by house prices.

Another area of contention might be quality of third level destination. While it is a truth universally acknowledged that Trinity College and University College, Dublin are two of the world's finest universities it is not at all obvious that every Irish school leaver dreams of entering their portals. Many school leavers outside the Dublin area, even if they had the points for TCD and UCD, might prefer to go to their local university. On the other hand, TCD and UCD might be the natural destinations for Dublin based school leavers. So, it is possible that the weighting scheme used in this paper has built into it a bias against non-Dublin schools.

This paper offered a methodology - with a long and distinguished pedigree in economics - which is capable of providing answers to questions in which responsibility needed to be apportioned between exposure and response. However, it might be pertinent to draw attention to a limitation of this methodology. It should be emphasised that the response effect was defined as a residual: it was what could not be explained by differences between different school types in their exposure to the

various "performance-influencing" factors. Consequently, the empirical results are only as good as the variables used in the regression; with a different set of variables the exposure/response split might have been different.

These are vexed questions but they serve as reminders of the complexity of league tables and offer a guide to their future refinement. Notwithstanding these, and possibly several more, *caveats*, the paper raises the wider - and, possibly, useful - question of how school league tables might be constructed so as to better reflect the "true" performance of a school. It is obvious that the raw figures as published in newspapers by ignoring school circumstances do not do this: they do not reflect the fact that certain schools, given all their advantages, cannot help but do well and that others, handicapped by circumstances, do well under difficult conditions. This study was predicated on the belief that any move towards adjusting for school circumstances in drawing up league tables is, in principle, to be welcomed.

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Table 1: Third Level Destinations and Weights used in WPRI calculations

Destination	Weight
Trinity College, Dublin	3
University College, Dublin	3
Royal College of Surgeons in Ireland, Dublin	2
Dublin City University	2
University of Limerick	2
National University of Ireland, Maynooth	2
National University of Ireland, Galway	2
University College, Cork	2
Queen's University, Belfast	2
UK Universities	2
Athlone Institute of Technology	1
Blanchardstown Institute of Technology	1
Cork Institute of Technology	1
Dublin Institute of Technology	1
Dundalk Institute of Technology	1
Galway-Mayo Institute of Technology	1
Institute of Technology, Carlow	1
Institute of Technology, Letterkenny	1
Institute of Technology, Limerick	1
Institute of Technology, Sligo	1
Institute of Technology, Tralee	1
Institute of Technology, Waterford	1
National College of Ireland	1
St. Patrick's, Drumconda	1
Institute of Art, Design and Technology, Dun Laoghaire	1
National College of Art and Design, Dublin	1
St. Angela's College, Lough Gill	1
Froebel College of Education, Blackrock, Dublin	1
Coláiste Mhuire, Marino, Dublin	1
Church of Ireland College of Education, Dublin	1
Mary Immaculate College, Limerick	1
Mater Dei Institute of Education, Dublin	1
Shannon College of Hotel Management	1

Table 2: Feeder School Performance by County

County (number of schools: number of leavers)	Proportion of students in feeder schools in the county proceeding to third level education (PR)	Weighted PR Index (WPRI) for Feeder Schools in the county
Carlow (11: 759)	72.6	38.8
Cavan (10: 653)	74.9	40.0
Clare (18: 1,184)	75.4	39.2
Cork City (35: 2,399)	73.9	41.1
Cork County (56: 3,418)	77.1	39.6
Donegal (24: 1,871)	72.7	34.8
Dublin City (80: 5,699)	67.0	45.3
Dublin South (49: 3,700)	70.1	45.4
Dún Laoghaire-Rathdown (17: 1,228)	83.6	60.4
Fingal (21: 2,282)	61.1	35.6
Galway City (13: 1,185)	80.5	48.0
Galway County (31: 1,942)	79.2	39.5
Kerry (26: 1,856)	78.8	40.6
Kildare (25: 2,133)	70.7	40.9
Kilkenny (15: 928)	76.4	41.5
Laois (12: 749)	69.7	37.5
Leitrim (8: 405)	81.7	41.2
Limerick City (17: 1,400)	69.4	38.3
Limerick County (19: 1,057)	74.6	39.2
Longford (8: 558)	73.8	39.1
Louth (18: 1,539)	68.5	35.4
Mayo (28: 1,600)	81.1	41.5
Meath (18: 1,641)	65.4	35.0
Monaghan (11: 710)	80.7	40.0
Offaly (11: 821)	67.6	35.4
Roscommon (8: 495)	78.4	41.4
Sligo (12: 751)	81.1	41.5
Tipperary North (18: 1,144)	66.5	35.7
Tipperary South (13: 872)	69.7	36.4
Waterford City (10: 780)	74.9	36.1
Waterford County (10: 592)	75.0	35.8
Westmeath (15: 1,297)	72.4	38.8
Wexford (21: 1,681)	71.6	38.4
Wicklow (22: 1,277)	66.1	39.9
Total (710: 50,606)	72.4	40.6

The WPRI was computed, *for each school*, as the weighted sum of the proportion of its students going to different institutions of third level education. The weights were 3, 2, or 1, depending on the quality of the destination, and are detailed in Table 1. The maximum and minimum values of the WPRI are, respectively, 3 and 0. Finally, $WPRI = (GPA/3) * 100$

The county WPRI was the weighted average of the school WPRI's, the weights being the number of leavers in each school.

Table 3: Feeder School Performance by School and Area Characteristic

County (number of schools: number of leavers)	Proportion of students in feeder schools proceeding to third level education	Weighted PR Index (WPRI) for Feeder Schools
Total (710: 50,606)	72.4	40.6
<i>Gaelscoileanna</i> (46: 2,354)	80.1	45.4
<i>Gaelscoileanna</i> in Dublin (8: 366)	81.1	59.8
<i>Gaelscoileanna</i> outside Dublin (38: 1,988)	79.9	42.7
English-language schools (664: 48,252)	72.1	40.4
Private (fee paying) schools (56: 4,273)	92.4	65.7
Public (non-fee paying, English language) schools (596: 41,322)	69.3	36.9
Grind schools (12: 2657)	82.5	54.0
Large schools (455: 38,236)	74.7	41.7
Small schools (255: 12,370)	65.6	37.0
City schools (242: 18,673)	70.2	43.8
Dublin schools (167: 12,909)	68.4	45.0
South Dublin schools (78: 6,122)	71.4	48.7
North Dublin Schools (56: 3,706)	58.9	35.4
Dún Laoghaire-Rathdown schools (17: 1,228)	83.6	60.4
D6 schools (10: 787)	85.4	63.0
D4 schools (7: 402)	85.3	65.4

1. The *Gaelscoileanna* are identified in the Department of Education website:

http://www.gaelscoileanna.ie/index.php?page=secondary_schools

2. A school was regarded as a "city school" if it was situated in an area where more than 90 percent of the population lived in towns and cities with a population of 1,500 or more.

Table 4: Regression Estimates of School Performance

	Proportion of students in schools proceeding to third level education (PR)		Weighted PR Index (WPRI) of schools	
	Coefficient Estimate	t value	Coefficient Estimate	t value
School size: large=1	3.53	18.4	1.48	11.3
Private schools	23.62	81.6	25.07	126.8
<i>Gaelscoileanna</i>	11.35	32.1	9.50	39.4
City Schools	-2.94	-9.3	-1.69	-7.9
North Dublin schools	-5.91	-15.1	-2.72	-10.2
South Dublin schools	-6.81	-18.1	-2.55	-9.9
Elite Dublin Schools	9.03	22.4	12.41	45.2
Percentage of persons in county who were owner-occupiers	0.06	2.2	-0.15	-8.4
Percentage of persons in county who regarded themselves of Irish ethnicity	0.75	13.0	0.17	4.2
Percentage of persons in county whose <i>highest</i> level of completed education was lower secondary	-0.32	-11.3	0.01	0.3
Percentage of persons in county who had a personal computer	-0.94	-30.7	-0.21	-10.3
Unemployment rate in county	-2.16	-25.5	-1.65	-28.6
Percentage of persons in county in professional, managerial, technical occupations	0.01	4.2	0.00	1.9
Number of "sits" in school	0.12	59.6	0.10	68.7
Intercept	78.39	16.1	45.43	13.7
Equation statistics	R²-adj = 0.300	Obs = 47,949	R²-adj = 0.434	Obs = 47,949

Note:

1. The estimates are *weighted* least squares estimates, the weights being the number of leavers in each school.
2. The county percentages refer to persons 20 years of age or over.

Table 5: Regression Estimates of School Performance as measured by the proportion of students proceeding to third level education (PR)

	Public schools		<i>Gaelscoileanna</i>		Private schools	
	Coeff Estimate	t value	Coeff Estimate	t value	Coeff Estimate	t value
School size: large=1	4.49	21.5	-16.25	-23.8	0.69	1.6
City Schools	-4.10	-11.5	16.59	10.2	-3.97	-6.5
North Dublin schools	-5.83	-13.6	-28.68	-17.1	12.98	14.4
South Dublin schools	-8.55	-19.1	-42.78	-21.0	-0.84	-1.8
Elite Dublin Schools	11.30	21.3	27.42	-8.4	4.54	6.9
Percentage of persons in county who were owner-occupiers	0.14	5.2	0.75	5.4	-2.71	-28.2
Percentage of persons in county who regarded themselves of Irish ethnicity	0.74	11.0	0.40	1.3	2.87	24.7
Percentage of persons in county whose <i>highest</i> level of completed education was lower secondary	-0.42	-13.0	-2.16	-10.8	2.53	20.7
Percentage of persons in county who had a personal computer	-1.11	-33.6	0.15	1.1	1.52	17.8
Unemployment rate in county	-2.33	-25.3	4.10	15.2	-1.92	-7.8
Percentage of persons in county in professional, managerial, technical occupations	0.00	2.6	0.04	13.4	1.70	15.2
Number of leavers in school	0.13	57.4	0.13	18.4	0.01	3.4
Intercept	90.33	16.2	95.41	4.2	-274.15	-18.3
Equation statistics	R²-adj = 0.240	Obs = 41,322	R²-adj = 0.492	Obs = 2,354	R²-adj = 0.311	Obs = 4,273

Rows in *italicised* font indicate that the estimates were significantly different between the non-fee English language schools and the other schools (*Gaelscoileanna* or fee paying) at 5% significance.

Table 6: Regression Estimates of School Performance as measured by the Weighted PR Index (WPRI) of schools

	Public schools		<i>Gaelscoileanna</i>		Private schools	
	Coeff Estimate	t value	Coeff Estimate	t value	Coeff Estimate	t value
School size: large=1	1.95	14.6	-7.24	-14.7	1.53	3.0
City Schools	-3.15	-13.7	10.52	9.0	-4.09	-5.6
North Dublin schools	-2.31	-8.3	-18.57	-15.4	-1.12	-1.1
South Dublin schools	-4.27	-14.8	-26.48	-18.1	-0.76	-1.4
Elite Dublin Schools	13.13	38.5	25.18	10.7	-0.19	-0.2
Percentage of persons in county who were owner-occupiers	-0.10	-5.4	-0.01	-0.1	-2.97	-26.1
Percentage of persons in county who regarded themselves of Irish ethnicity	0.09	2.1	-1.15	-5.2	0.98	7.1
Percentage of persons in county whose <i>highest</i> level of completed education was lower secondary	-0.06	-2.8	-0.01	-0.1	3.63	25.1
Percentage of persons in county who had a personal computer	-0.37	-17.6	0.95	9.2	2.14	21.0
Unemployment rate in county	-1.76	-29.7	2.39	12.3	-2.43	-8.3
Percentage of persons in county in professional, managerial, technical occupations	0.00	-1.4	0.03	11.2	2.94	22.3
Number of leavers in school	0.10	71.9	0.05	9.6	-0.01	-1.2
Intercept	62.94	17.5	72.57	4.5	-269.97	-15.2
Equation statistics	R²-adj = 0.210	Obs = 41,322	R²-adj = 0.717	Obs = 2,354	R²-adj = 0.420	Obs = 4,273

Rows in *italicised* font indicate that the estimates were significantly different between the non-fee English language schools and the other schools (*Gaelscoileanna* or fee paying) at 5% significance.

Table 7
The Decomposition of the proportion of students progressing to third level education by *Gaelscoileanna* and public schools

<i>Sample Average</i>		<i>Public school attributes evaluated at <i>Gaelscoileanna</i> coefficients</i>			<i>Gaelscoileanna attributes evaluated at public school coefficients</i>	
$P^G - P^N$		Attributes Difference*	Residual		Attributes Difference**	Residual
$80.1 - 69.3 = 10.8$		$80.1 - 75.9 = 4.2$	$75.9 - 69.3 = 6.6$		$68.8 - 69.3 = -0.5$	$80.1 - 68.8 = 11.3$

P^G and P^N are the proportions of leavers who are, respectively, in *Gaelscoileanna* and public schools progressing to third level education

* Attributes difference: *holding coefficients constant at *Gaelscoileanna* values*, this difference represents the inter-group difference in proportions due to differences in their attributes between *Gaelscoileanna* and public schools.

** Attributes difference: *holding coefficients constant at public school values*, this difference represents the inter-group difference in proportions due to differences in their attributes between *Gaelscoileanna* and public schools.

Table 8
The Decomposition of the Weighted PR Index (WPRI) of schools by *Gaelscoileanna* and public schools

<i>Sample Average</i>		<i>Public school attributes evaluated at <i>Gaelscoileanna</i> coefficients</i>			<i>Gaelscoileanna attributes evaluated at public school coefficients</i>	
$I^G - I^N$		Attributes Difference*	Residual		Attributes Difference**	Residual
$45.4 - 36.9 = 8.5$		$45.4 - 43.4 = 2.0$	$43.4 - 36.9 = 6.5$		$35.8 - 36.9 = -1.1$	$45.4 - 35.8 = 9.6$

I^G and I^N are the WPRI values of, respectively, *Gaelscoileanna* and public schools with respect to students progressing to third level education

* Attributes difference: *holding coefficients constant at *Gaelscoileanna* values*, this difference represents the inter-group difference in WPRI values due to differences in their attributes between *Gaelscoileanna* and public schools.

** Attributes difference: *holding coefficients constant at public school values*, this difference represents the inter-group difference in WPRI values due to differences in their attributes between *Gaelscoileanna* and public schools.

Table 9
The Decomposition of the proportion of students progressing to third level education by private and public schools

<i>Sample Average</i>		<i>Public school attributes evaluated at private school coefficients</i>			<i>Private school attributes evaluated at public school coefficients</i>	
$P^F - P^N$		Attributes Difference*	Residual		Attributes Difference**	Residual
$92.4 - 69.3 = 23.1$		$92.4 - 106.2 = -13.8$	$106.2 - 69.3 = 36.9$		$68.8 - 69.3 = -0.5$	$92.4 - 68.8 = 23.6$

P^F and P^N are the proportions of leavers who are, respectively, in private and public schools progressing to third level education

* Attributes difference: *holding coefficients constant at private school values*, this difference represents the inter-group difference in proportions due to differences in their attributes between private and public schools.

** Attributes difference: *holding coefficients constant at public school values*, this difference represents the inter-group difference in proportions due to differences in their attributes between private and public schools.

Table 10
The Decomposition of the Weighted PR Index (WPRI) of schools by private and public schools

<i>Sample Average</i>		<i>Public schools attributes evaluated at fee paying school coefficients</i>			<i>Private school attributes evaluated at public school coefficients</i>	
$I^F - I^N$		Attributes Difference*	Residual		Attributes Difference**	Residual
$65.7 - 36.9 = 28.8$		$65.7 - 89.1 = -23.4$	$89.1 - 36.9 = 52.2$		$39.8 - 36.9 = 2.9$	$65.7 - 39.8 = 25.9$

I^F and I^N are the WPRI values of, respectively, private and public schools with respect to students progressing to third level education

* Attributes difference: *holding coefficients constant at private school values*, this difference represents the inter-group difference in WPRI values due to differences in their attributes between private and public schools.

** Attributes difference: *holding coefficients constant at public school values*, this difference represents the inter-group difference in WPRI values due to differences in their attributes between private and public schools.

Table 11
The Decomposition of the proportion of students progressing to third level education by *Gaelscoileanna* and private schools

<i>Sample Average</i>		<i>Private school attributes evaluated at <i>Gaelscoileanna</i> coefficients</i>			<i>Gaelscoileanna attributes evaluated at private school coefficients</i>	
$P^F - P^G$		Attributes Difference*	Residual		Attributes Difference**	Residual
$92.4 - 80.1 = 12.3$		$75.1 - 80.1 = -5.0$	$92.4 - 75.1 = 17.3$		$92.4 - 133.6 = -41.2$	$133.6 - 80.1 = 53.5$

P^G and P^F are the proportions of leavers who are, respectively, in *Gaelscoileanna* and private schools progressing to third level education

* Attributes difference: *holding coefficients constant at Gaelscoileanna values*, this difference represents the inter-group difference in proportions due to differences in their attributes between *Gaelscoileanna* and private schools.

** Attributes difference: *holding coefficients constant at private school values*, this difference represents the inter-group difference in proportions due to differences in their attributes between *Gaelscoileanna* and private schools.

Table 12
The Decomposition of the Weighted PR Index (WPRI) of schools by *Gaelscoileanna* and private schools

<i>Sample Average</i>		<i>Private school attributes evaluated at <i>Gaelscoileanna</i> coefficients</i>			<i>Gaelscoileanna attributes evaluated at private school coefficients</i>	
$I^F - I^G$		Attributes Difference*	Residual		Attributes Difference**	Residual
$65.7 - 45.4 = 20.3$		$56.5 - 45.4 = 11.1$	$65.7 - 56.5 = 9.2$		$65.7 - 136.9 = -71.2$	$136.9 - 45.4 = 91.5$

I^G and I^F are the WPRI values of, respectively, *Gaelscoileanna* and private schools with respect to students progressing to third level education

* Attributes difference: *holding coefficients constant at Gaelscoileanna values*, this difference represents the inter-group difference in WPRI values due to differences in their attributes between *Gaelscoileanna* and private schools.

** Attributes difference: *holding coefficients constant at private school values*, this difference represents the inter-group difference in WPRI values due to differences in their attributes between *Gaelscoileanna* and private schools.

Table 13: The 25 Highest Ranked Feeder Schools in Ireland by Observed Values of the Weighted PR Index (WPRI)

School	WPRI	Fees	Gaelscoil	Proportion to Third level
Convent Of The Sacred Heart, Mount Anville Road, Goatstown, Dublin 14	92.9	Y	N	100
The Teresian School, 12 Stillorgan Road, Dublin 4	89.7	Y	N	100
Gonzaga College, Sandford Road, Dublin 6	87.3	Y	N	100
Colaiste Eoin, Br Stigh Lorgan, Baile An Bhothair, An Charraig Dhubh	85.7	N	Y	100
St Joseph Of Cluny Sec.School, Bellevue Park, Ballinclea Rd, Dun Laoghaire	83.9	Y	N	100
Loreto Secondary School, Foxrock, Dublin 1	83.8	Y		100
Colaiste Iosagain, Br Stigh Lorgan, Baile An Bhothair, An Charraig Dhubh	83.8	N	Y	100
Dominican Convent, Muckcross Park College, Marlborough Road, Donnybrook	80.9	N	N	100
Alexandra College, Milltown, Dublin 6	80.3	Y	N	91.4
Glenstal Abbey School, Murroe, Limerick	79.8	Y	N	100
Rosemont Park School, Temple Road, Blackrock, Co. Dublin	78.4	Y	N	100
Holy Child School, Military Road, Killiney, Co. Dublin	78.3	Y	N	100
Clongowes Wood College, Naas, Co Kildare	78.2	Y	N	92.3
Loreto College, 53 St. Stephens Green, Dublin 2	77.7	Y	N	96.6
St Gerards, Thornhill, Bray, Co Wicklow	77.6	Y	N	100
The High And Diocesan School, Zion Rd, Rathgar, Dublin 6	77.6	Y	N	98.4
St. Michaels College, Ailesbury Road, Dublin 4	77.6	Y	N	100
St Andrews College, Booterstown Ave, Blackrock, Co Dublin	76.7	Y	N	95.6
Loreto High School, Beaufort, Grange Road, Rathfarnham	76.2	Y	N	100
Blackrock College, Blackrock, Co Dublin	73.5	Y	N	100
College Of St Columba, Rathfarnham, Dublin 16	70.8	Y	N	90.6
Deutsche Schule, St. Kilian's, Roebuck Road, Clonskeagh	70.7	Y	N	92.7
Sandford Park School, Sandford Road, Ranelagh, Dublin 6	70.5	Y	N	100
Belvedere College, Gt Denmark Street, Dublin 1	69.6	Y	N	100
St Conleths College, Clyde Road, Dublin 4, Ballsbridge	69.0	Y	N	95.3

Table 14: The 25 Highest Ranked Feeder Schools in Ireland by the Adjusted Values of the WPRI

School	WPRI (adjusted)	WPRI (original)	Fee	Gaelscoil	Proportion to Third level
Colaiste Fhlannain, Inis, Co An Chlair,	56.0	40.7	N	N	71.8
St Andrews College, Booterstown Ave, Blackrock, Co Dublin	54.3	76.7	Y	N	95.6
The High And Diocesan School, Zion Rd, Rathgar, Dublin 6	53.3	77.6	Y	N	98.4
St Louis High School, Rathmines, Dublin 6,	51.5	44.4	N	N	71.4
St. Mac Dara's Comm. College, Templeogue,, Dublin 6 W,	51.3	36.1	N	N	68.4
Gonzaga College, Sandford Road, Dublin 6,	50.6	87.3	Y	N	100.0
Alexandra College, Milltown, Dublin 6,	50.2	80.3	Y	N	91.4
Gorey Community School, Gorey, Co. Wexford,	49.9	36.6	N	N	63.1
Loreto College, 53 St. Stephens Green, Dublin 2,	49.7	77.7	Y	N	96.6
Terenure College, Terenure, Dublin 6w,	49.5	60.6	Y	N	94.8
St. Michaels College, Ailesbury Road, Dublin 4,	49.4	77.6	Y	N	100.0
Marian College, Ballsbridge, Dublin 4,	49.3	38.1	N	N	57.1
Dominican Convent, Muckross Park College, Marlborough Road, Donnybrook	49.1	80.9	N	N	100.0
Castletroy Community College, Castletroy, Co Limerick,	48.8	53.6	N	N	92.3
Our Ladys School, Templeogue Rd, Terenure, Dublin 6w	48.6	63.6	N	N	93.5
St Marys College, Rathmines, Dublin 6,	48.6	64.9	Y	N	100.0
Christian Brothers College, Monkstown Park, Dun Laoghaire, Co Dublin	48.4	65.7	Y	N	95.1
Templeogue College, Templeogue, Dublin 6w,	48.0	48.0	N	N	89.2
Wesley College, Ballinteer, Dublin 16,	47.8	66.9	Y	N	92.0
St. Benildus College, Upper Kilmacud Road, Stillorgan, Blackrock	47.6	63.5	N	N	97.9
Colaiste Mhuire, An Muileann Cearr, Co Na Hiarraí,	47.4	35.7	N	N	68.6
Rathmines College, Town Hall, Rathmines, Dublin 6	47.4	54.0	N	N	74.2
An Scoil Idirmheanach, Cill Orglan, Cill Airne, Co Chiarraí	46.9	40.3	N	N	71.8
Catholic University School, 89 Lower Leeson Street, Dublin 2,	46.7	59.9	Y	N	98.3
Newpark Comprehensive School, Newtownpark Avenue, Blackrock, Co Dublin	46.6	47.1	N	N	76.9